

ITEMS OF INTEREST.

VOL. VIII.

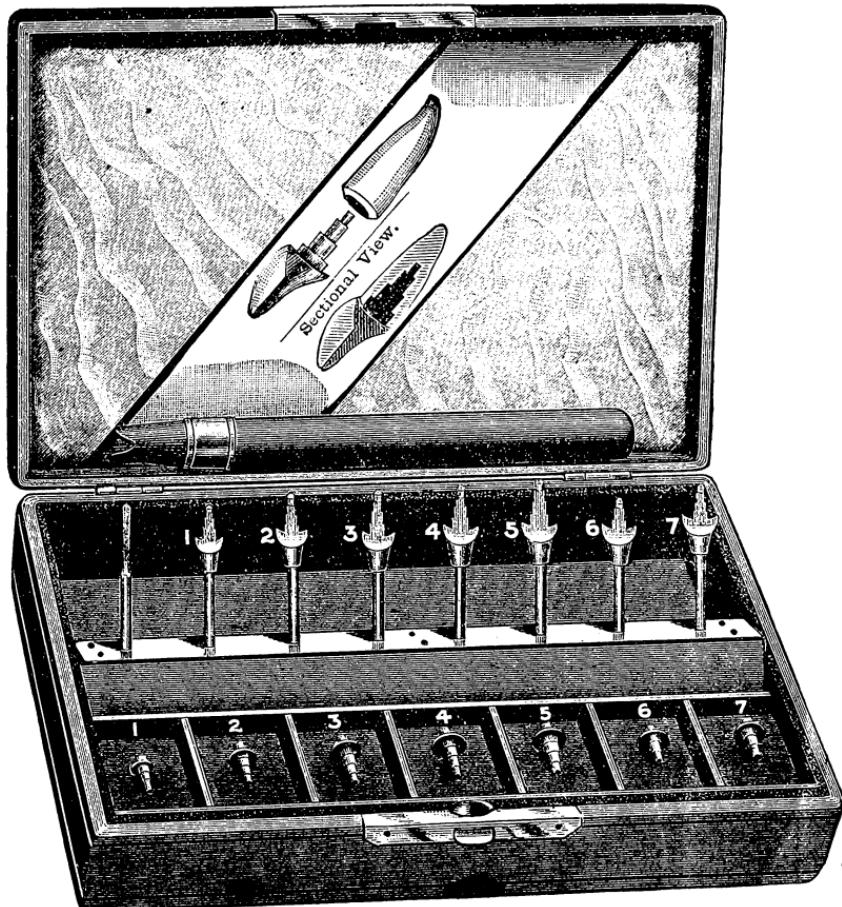
PHILADELPHIA, APRIL, 1886.

No. 4.

Shots from the Profession.

THE NEW LOW CROWN AND ITS ADVANTAGES.

DR. J. E. LOW, CHICAGO.



No. 1.

Having had an extensive experience in crown work, and a thorough knowledge of all crowns in use, I present this crown as nearer perfection than any before offered to the Dental Profession. I am aware the average dentist does not differ from the rest of humanity in his disinclination for change. When an improvement is presented he at once begins to consider what objection he can raise to it, instead of what good qualities it may possess. I do not object to criticism; this will assist me to make improvements.

We will consider two objections. One of the most common raised by those who have never used our crown, is that the instruments cut away too much tooth substance in preparing the root, and that thus the walls of the tooth are weakened. Then again, some claim it necessary to have a band round the tooth to prevent it from splitting. The other objections are not of sufficient importance to notice. I will give in detail my method, and then I think all will agree that these objections are not well founded.

In our first cut we present seven instruments. No. 1, the smallest, will be used most frequently. Any tooth, generally considered beyond restoration, can be crowned with this instrument.



No. 2.

We now have before us in cut No. 2, a central incisor badly decayed; there is little tooth substance exposed below the margin of the gum, the little remaining being the outer walls. The first step to be taken to place on this root a strong and serviceable crown, is to cut or grind even with the gum what tooth substance remains. We start off with the supposition that the root is in a healthy condition; if not it must first be treated, and made so, as this is the first consideration in the final result of a successful operation. The next step is to select the instrument in accordance with the size of the opening in the root to be crowned. The larger the opening in the root, the larger the inside or center cutters must be, and the narrower the cutters that bevel and prepare the end of the root. The reason of this is that the space is nearly all taken by the inside cutters, in order to reach and cut away the decayed tooth substance, and prepare the root to properly receive the step plug, with bevel cap, which covers the end.



No. 3.

We have seven sizes of instruments, and if the right one is selected, no tooth substance will be removed that ought not to be, cutting, as it does, the least where the tooth is smallest, or, in other words, we cut the opening in the tooth tapering to the shape of the root.

These cutters leave the root in the shape of No. 3 with graded step. We next select the graded step plug as seen in No. 4.



No. 4.

This is the same size as the instrument, and will perfectly fit the opening and cover the end in a beveled saucer shape; and, by its attachment to the inside step plug when cemented, make a combined union of strength, unequaled by any other crown, and so made as to be impossible for the root to split. No. 5 is the step plug placed in position.



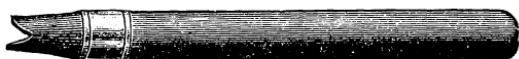
No. 5.

After placing the plug in position, an articulation of wax and impression of the space to be supplied and of the adjoining teeth is taken in plaster of Paris. Before taking the impression be careful that the pin, which extends from the cap of step-plug for purpose of removing, is free from all roughness (a roughness that is sometimes left in the cutting of the plug) as this is liable to break the plaster, when removing the impression. I generally file the step-plug on a slant from the labial side to the cutter, so that there shall be no mistake in replacing the step-plug into its proper place in the impression. After placing the plug back in the impression, if necessary, take a thin, heated spatula, and stick the plug fast with a little hard wax on the outer edge, so that it may not be disturbed in pouring. Be careful not to get any wax on the part of the plug where you do not want solder to flow in. Now varnish the cast as usual, but do not touch the plug with varnish. Next, pour with plaster and sand, asbestos or pulverized pumice stone, any one of which will do. After the plaster is thoroughly hardened, carefully cut it away in the usual manner. Place the articulation in the articulator, and pour in the usual way. The tooth is selected and we proceed to back it in the following manner: First, grind and fit the tooth to the cast and cap to suit you; then cover the entire inner surface with thin platinum, the thinner the better. Burnish close to the surface of the tooth. Then use 28 gauge platinum for

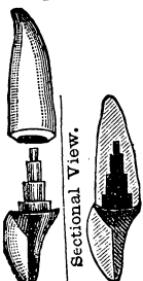
a backing down to where the tooth is ground out to fit the step-plug, and bend the pins down to hold the two pieces of platinum tight to the tooth. We now have cut No. 6 representing the tooth as it appears backed ready to place in position. Next, place the tooth in position in the cast, cover with plaster and sand, and solder with gold coin. After finishing and polishing, the crown is ready for adjustment. Moisten the step-plug and cap with cement, as in No. 7, and with the little roter, seen in cut No. 8, gently press the crown up in position, and we have the crown completed as seen in No. 9.



No. 6.



NO. 8.



No. 7. NO. 9.



If you desire a cheap crown, solder with block tin. After experimenting with various metals, I have succeeded in making a step-plug, or tip, as I usually call it, of platinum and nickel, that is as strong as steel, and cannot be melted.

In the above description you have my way of making the crown. Given in detail, it seems like a long and tedious method, but it is very short; and, as I always keep a laboratory man, not twenty minutes of my time is consumed in making and setting a crown, only prepare the root, take an articulation and impression: then with the shape of the tooth, I hand all in to the laboratory man for finishing. When my patient returns, providing the crown is not made while I am doing some other work for him, it takes me from 10 to 15 minutes, counting the setting of the cement, to adjust the crown.

This is my manner of setting the crown to save time at the chair. If I perfect the crown myself, I take a shorter way; after preparing the root with the instrument and placing the step-plug in position, my tooth is selected, ground, and arranged in the mouth, after which I back the tooth as before described. I warm and stick to the backing of the tooth a small amount of sticking wax, made of rosin, gutta percha, and beeswax, and place the tooth in position in the mouth, perfectly embedding the top of the step-plug in the wax. Great care must be exercised to have the tooth in the position desired, and in pressing the tooth and wax against the plug. I next carefully remove the wax and tooth and with pliers remove the step-plug and place the impression just made. Then with a heated spatula stick the tip of wax together; pour in the usual way, and in a few moments it is ready to solder. Thus a crown can be set easily in one hour's time.

If you wish to crown a bicuspid or a molar, your first step is to grind the tooth substance even with the margin of the gum, and then use your drill. In drilling—instead of following the nerve cavity direct, which would leave the instrument a little diagonal—hold the instrument perpendicular. This leaves the upper portion of drill to the outer wall of the root, and brings the lower portion of the drill to the inner side of the root. You would puncture the wall of the root, if you went deep enough, but there is no need of going to such a depth. Next take No. 1 cutter, which will invariably be the instrument to operate on all the bi-cuspid and molar root canals, and, after carefully cutting to the depth desired, the root is ready for the introduction of the step-plug of same size. We now drill one other root in the same manner and after placing the step-plugs in position take an articulation and impression, remove the plugs and place in the impression; pour and separate, and place in the articulator as before described. We have, with the adjoining teeth an exact impression of the root to be crowned.

Next take a thin piece of platinum and make two perforations for the pins on the ends of the step-plugs to enter; press the platinum down over the root and burnish close to it: then remove and trim by the marks made in burnishing to the exact shape of the root. Place the platinum on the root again, and we are ready to select our tooth. This should be made the same as is used for bridge work, with gold cusps, so no breakage can possibly occur. Place the tooth in position in the articulator and hold in place with wax. Incase in plaster and sand, and fill in and solder with coin gold; or if you choose, block tin can be used. After polishing and burnishing, you have a strong, durable, crown ready to be adjusted, only equaled by the natural tooth.

In setting a bicuspid we seldom use more than one step-plug, and the process is similar to setting a molar.



No. 10.

No. 10 is the root cut ready to receive the step-plug.



No. 11.

No. 11 shows us the step-plug with the platinum covering the entire tooth surface. In cut No. 12 it will be seen that the cap to the step-plug goes below the surface of the tooth, leaving tooth substance all the way round; but the platinum that is soldered to the step-plug rests on the tooth surface.



No. 12.

In cut No. 13 we see the crown ready for adjustment.



No. 13.

No. 14 is the tooth after it has been adjusted.

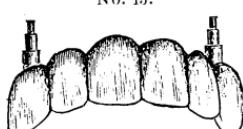


No. 14,

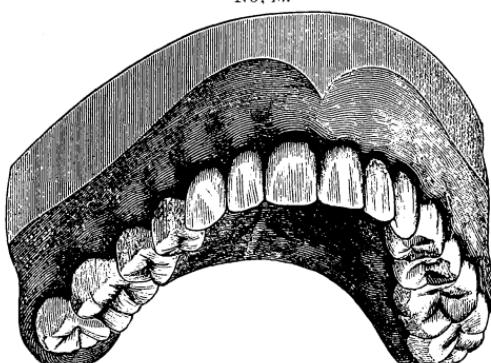
These plugs can be used to great advantage in varied dental operations. There is nothing equal to them for restoring broken and decrepid teeth to their original shape, appearance and usefulness. I use them exclusively in bridge work. They make a firmer, stronger and more durable ground work for bridging than any other method I have ever discovered. In badly decayed molars, where there is not sufficient tooth substance to hold a gold crown for bridge, I always place one of these plugs in the root to constitute a solid foundation. If the pin on the end of the plug for removing is not long enough, it can be very readily lengthened, by soldering a piece to it, and this without danger of injuring or melting. The plugs are made of a perfectly non-corrosive metal, though the color might indicate otherwise. They are strong as steel and can not be melted by any heat from an ordinary blow-pipe.

In the following cuts, No. 15 and 16, will be seen a case of six teeth, four centrals and two cuspids, all of which were supplied with two Low crowns.

No. 16.



No. 15.



BEFORE ADJUSTMENT.

AFTER ADJUSTMENT.

THE STUDY OF CHEMISTRY.

L. P. BETHEL, D. D. S., KENT, OHIO.

Chemistry is an important science, specially to the Physician and Dentist. "Oh, that is dry stuff," says one. "Of what use is it to me? What need I care about the composition of air and water?—I can live just as well without knowing. The air will benefit me just the same."

"My Dear," his wife may say; "Why do scientists advise lowering the window specially at night? Why isn't the warm air as good as the cold? And why do they say that, owing to our breathing in and giving off certain elements, plants are healthy in our living and sleeping rooms during the day but unhealthy at night?"

He pointedly answers:—

"It's all *bosh*. Air is air, and the idea of plants breathing is ridiculous."

Such ignorance is a shame to any man, still more in a dentist or a physician. Yet, how many we have among us who cannot satisfactorily give the general principle involved in these and other simple though important questions? For instance, why may not a base plate of silver be vulcanized with rubber? How many have favored the idea of making a base plate of aluminium, and afterward stood silent, unable to account for the minute perforations in the metal that had occurred after its insertion in the mouth! How many can tell why oxy-phosphate hardens?

What we want to impress on the mind of the dentist is the value of a thorough knowledge of chemistry. "But this is not what I need to fill teeth or to put up artificial dentures." Perhaps not directly; but indirectly it is. Why do you fill a tooth? To counteract chemical action. Why do you extract a tooth? To prevent further chemical action. Why do teeth decay? Because of chemical action.

It is not enough to know a thing is so; don't be so easily satisfied with a half understanding; go deeper, and find *why* it is so.

It's the *why* and not the *if* that we are dealing with. Why do we get heat from coal? Why does iron rust when exposed to air or water? Why does silver turn dark in the presence of sulphur? Why does nitro-hydrochloric acid dissolve gold when neither nitric nor hydrochloric acid singly will do it?

"Oh, because there is a chemical action set up."

Yes, but what is that action?

"I don't know."

That is the point exactly. *If* it is thus and so, you know it is so, but you don't know *why*.

Would it not be more satisfactory to know how these chemical reactions are brought about, and why?

When applying some medicinal remedy, as, for instance, Peroxide of Hydrogen, it is important to know how and why it acts on the tissues and the micro-organisms secreted in the pus pockets of Pyorrhea or of Alveolar abscess, as well as that, being a disinfectant, it destroys the germs.

Our Physiology, Pathology, Materia Medica, and all works on Medical or Dental science, are founded on chemistry. Therefore, to get a thorough and correct understanding of these, let us pursue the study of chemistry determined to go to its depths.

THE USE OF THE DENTAL ENGINE.

DR. W. E. DRISCOLL, MANATEE, FLA.

Is not the dental engine used too exclusively in excavating, by some of the young men who have come into the profession since the introduction of that machine? How can it be otherwise, when many of them have nothing approaching a complete or serviceable set of hand excavators, burs, and drills?

This is a much more important question than many imagine. How can these inexperienced young men tell when slightly defective tissue is passed, and when that which should be retained is reached, if sharp engine burs are mainly used? The educated touch with properly shaped excavators and enamel trimmers, with the better view they allow, is of the utmost value as compared with engine instruments in feeling the way to reliable borders for joining the fillings to. What attachment of the engine, for instance, can take the place of the different sizes of the half-curved hoe, or rather *spade* excavator, at the cervical portion of a proximal cavity? The touch and unobstructed view simultaneously exercised is the only sure test of when to stop, and that, too, at the most critical point in the entire operation of preparing a cavity for filling.

Then we have Dr. Frank Abbott's small scalers, Nos. 3, 4, 5 and 6, sharpened on three angles, for testing friable enamel around proximal cavities, as we advance, which cannot be as well done with any other form of instrument.

After saying so much, there is a point in the preparation of a cavity in which the engine is inapproachable, and that is, in the use of paper disks in polishing the borders of proximal cavities, for perfectly joining the filling thereto. Also, in finishing the filling, nothing will equal this disk, for the larger portion of the work. In the use of alloys in the posterior teeth, many times, good retaining points can be made with the right angle, which holds a filling perfectly that could

scarcely be made at all with any other appliance, or if made, would invariably cost far more time, labor, and discomfort to both patient and operator. Then there can be no question of the propriety of consulting the preference of the patient, after both modes of excavating have been slightly tested. If we find he prefers one to the other on the score of comfort, in all reason we should conform to his preference as much as faithful service will permit. And we will find there is room for making much difference.

I find a majority prefer hand excavating to that of the engine, and engine disks to hand files. There is no better way to maintain our influence with a patient than to manifest a desire to avoid the infliction of pain; and this is a practical way to do it. It is the pain that a patient thinks might have been saved him, that sends him to the other man. Hand instruments may be kept much sharper than is the common practice, or than is practicable to keep engine burs. From experience at the "objective end" of blunt and dull excavating instruments, I am constrained to say it is but little less excusable to use dull instruments on dentine than it would be to operate with dull instruments on the soft tissues of the muscles in general surgery. We should use the engine when it will do the work better than will hand instruments, and *vice versa*. That all do this cannot be, since there is such a wide range in the equipments we see in different offices, as well as the great variation in the manner of operating.

FUNCTION, A FACTOR; NOT A CAUSE OF DEVELOPMENT.

DR. W. H. METCALF, NEW HAVEN, CT.

The theory advanced by intelligent medical men and dentists, that *function* changes form and substance, is so calculated to mislead or to foster an unbelief in the super-natural, that a few words on the subject may be appropriate.

That some great men credit matter with creative powers, is a fact greatly to be deplored. The more deeply they study nature and her laws, the greater seems to grow their indifference to the Creator, or primal cause of all life and action. We have at our dental meetings, prominent men who state that *function* changes the character of our teeth, and ascribing to this indefinite attribute, powers, almost infinite.

What is function?

"Webster, says it is the natural acting of an organ." This being correct, does it not imply a design, and therefore a designer?

Function then, is the operation, or action of a designer. It is therefore a medium acting for a designer and changing the character of the thing acted on.

Great men like Professor Tyndall, claim for ultimate matter,

innate faculties for organization, and reproduction. These faculties they class under numerous heads ; such as molecular adhesion, capillary attraction, chemical affinity, all ambiguous terms. Professor Sumner, of Yale, and another class of writers, hold the theory of the survival of the fittest subject to these natural laws.

Such theories must exclude the true idea of a God. The rational facts are these : Nothing can be made from nothing. "In the beginning *God* created the Heavens and the Earth." Matter, is incapable, inert, *dead*. It is therefore the ultimate of and ulterior to all things universal ; the lowest and most inferior. To suppose that matter can of itself create anything, is absurd. Neither can an inferior thing, create a superior. A machine is not superior to the man who designed it. A house is not superior to the architect. The same law applies to all things in nature. Matter, to operate, must first be vivified, or operated on by a superior, spiritual quality, called life. This view, does not exclude a reasonable idea of evolution, as God's method of improving the macrocosm. But in accepting this term, *evolution*, which is purely generic, we must not lose sight of one great fact, that all things, and their increments, are created by our Creator.

Now to the point about teeth. It is not *function* alone which changes their form and quality. Pluggers, in the hand of an intelligent, skilful dentist, fill teeth, but to say that pluggers alone could fill teeth is absurd. It is the will of the Dentist, which superintends the pluggers. In like manner function is subservient to the will. Even the heart and the lungs, called involuntary organs, cease to act, when the suicide so wills.

The will of man, rules supreme over all organic, and inorganic nature ; and by it man may even make of himself a devil, or an angel. He is created by the Creator, with the power to attain that wonderful capacity, "the image of his Maker." That he may, by the exercise of a rational will power, so regulate his diet, and habits, that, his teeth will also greatly improve, seems to us, a natural conclusion.

Robinson's fibrous foil. This material when properly used seems to possess some valuable qualities in saving teeth. It is easy of use and perfect in adaptation ; it is soft and cohesive, combining the good qualities of soft and cohesive gold foil, besides its therapeutic effect.

Nearly all cavities that are filled with amalgam might be filled with this, and many filled with gold should be lined at the cervical walls with it.

No retaining pits or grooves are often necessary, a suitable sized cylinder or pellet can be adapted and retained in place with remarkable firmness. The pluggers should be as large as the cavity will admit,

with shallow excavations, and every fiber of one piece should be thoroughly welded into a solid mass before another piece is introduced. I know of no more easy and effectual way to do this than with the "Bonwill engine" and mallet.

L. M. MATTHEWS, Ft. Scott, Ks.

WAS IT HONEST?

L. P. HASKELL.

Several years ago, a prominent army official came to me for a partial lower plate. He had been trying for 5 years to get one he could wear with comfort. I made one for him, (gold), and he was so much pleased, he wrote me a highly complimentary note, expressing his satisfaction.

He removed to Washington, and recently accidentally bent the plate while out of his mouth. He went to a dentist to whom he had been recommended, and was told it would be necessary to make a new plate, not having made any effort to restore the old one to shape. The plate was made, and he tried to wear it, but could not. Just at this time I was in Washington, and called to see him. He told me of his experience, but said he wanted to give the dentist a fair chance. I told him if he would get his old plate, he had left at the dentists, I had no doubt I could restore it, thinking I should have to take an impression and get a plaster cut on which to do it. Ten days afterward, failing to be able to wear his new plate, he called on me with the old one. I found the ends had been sprung inward slightly. At a venture I sprung them what I thought necessary, and the plate went right into place, and he said as he left, *it was all right*. Later in the day, I met him on the street, and asked him how he was getting along with his plate; he replied: "Tip-top, so much so I have not thought of it since you put it in."

The dentist not only made a new under plate, but said that in order to make it work well, he must have a partial upper; several teeth were missing on the left side, two of which he had lost since I made the lower plate, so this was made well enough to have of itself, but in no wise necessary to the success of the lower. This plate he could not wear any better than the lower.

Now this is a thing that too often occurs, where a dentist, instead of remedying some defect, (oftentimes a little change in the articulation when a change in the bearings has been brought about by a change in the mouth, loss of teeth, etc.), puts the patient to the expense of new work unnecessarily. The practice should be frowned on.

The restoration to a healthy and serviceable condition of even badly diseased teeth, is not now so much a question of skill with the dentist, as of willingness and ability with the patient.

THE FAILURE OF FILLINGS.

[Editorial in *Medical and Dental Journal*.]

Much has been written on this subject touching the causes of failure after an operation is supposed to have been perfectly performed. Let us consider a few instances in which the dentist is sometimes tempted by his inability to control circumstances, to attempt what he ought to postpone. You (or any one of us), for instance, have an appointment for a two-hours' sitting with a man of business. Not without some inconvenience has he visited your office three or four times to have a space wedged where you suspect, or have actually discovered, extensive caries. As he seats himself he pulls out his watch and remarks, "Now, doctor, I have just exactly two hours to spare, don't detain me any longer if you can possibly help it." "Oh, no; I can easily do this in that time," you rashly promise, if you happen to be of the sanguine kind. So you apply the dam, and after much persuasive effort succeed in coaxing it past the frail cervical border of the cavity. You had previously opened the cavity with chisels, so that you thought you knew exactly what was to be done. Now you set to work to prepare the cervical border, first of all. What is the matter with this man's mouth, that you find it more difficult to get at an anterior cavity in a bicuspid than you have often found in reaching a posterior cavity in a second molar, for other patients? Props assist you somewhat, but still it is awkward getting at that cavity. You proceed to prepare the cervical border, at some point or other you are sure to encounter the danger of the instrument's cutting the dam, so you touch the cavity rather gingerly there, though you reflect that if you had plenty of time you would take off the dam and cut away vigorously right there, gum or no gum. But you think you can get along, on a pinch, and so you pack in the gold and pound it a little harder against that uncertain point, so as to be sure of no leakage.

This is one kind of failure. What was the matter with you—or this dentist, we mean,—that he did not do exactly what his judgment dictated? He knew the work was not thorough. He should have frankly said to the patient, "I find that to prepare this cavity right I must remove the dam or else spoil it, which amounts to the same thing. By removing it I shall lose half an hour's time, but it must be done. I will then still have time to fill the tooth, but not to polish the filling. You must come again for that. I badly need the five dollars I propose to charge you, and my bills are always due when the fillings are in, whether they be finished or not." (If the chair is tilted back, it is well to tip it forward at this stage, so as to allow the patient access to his hip-pocket.)

Many a failure happens for the lack of a single instrument to reach

some nearly inaccessible point. A good operator should always be willing to stop and consider, when he encounters the slightest uncertainty. If this instrument were a little more curved, or a little longer, he thinks he would be able to do what he cannot do quite to his present satisfaction.

Many operators labor under a nervous strain, which makes them impatient of delays, and they are not really quite aware that they do not work up to their own conscientious standard. It is often difficult to get a good ready ; the cotton or rubber wedge has not quite accomplished all you expected of it, and your patient is becoming *im-patient* of repeated delays. The bit of nerve in a buccal root will not come out, though the dentist has spoiled a dozen broaches and a forenoon, tinkering with it. These things are very trying. But the man who sets his face like a flint against proceeding with the second step till he is sure the first is well taken will, in the end, gain many patrons, though he at first lose many who lack patience. That encroaching gum must be pushed back, that bit of nerve must be removed, and that groove or pit must be cut, hurt or no hurt, before you begin to fill.

It is well to let the patient know of these various contingencies before operating for him. Many failures are the result of a too accommodating disposition on the part of the dentist. Your patient lives in the country, and cannot come to town every day or two to have preliminary treatments made. The responsibility in this case rests on the dentist of estimating approximately how many calls will be required and how much time for the final operations. To his conditions and terms the patient should be required to conform, or the case should not be attempted. The woman who cannot possibly leave home and the baby to have her teeth filled, will manage, somehow, to leave both, and spend four or five days at the county fair or a circus. The dentist has an unquestionable right to require his patients to furnish him proper conditions for attaining his standard.

Another cause of failure arises from using too large coverings of gutta-percha or similar non-conductors, over nearly exposed pulps. It is usually difficult to pack gold solidly into a cavity two-thirds filled with a substance so elastic as to occasion a recoil of the instrument. Cement is better in this respect. Many a dentist has labored on, wasting more gold than he finally packs into the cavity, wondering why it will not adhere.

In active practice, the dentist must use careful judgment in arranging his appointments. He should so manage as to be sure of a good light and plenty of time for all difficult, tedious operations. To do this he may need to be somewhat arbitrary, but people will easily forgive and forget that, if the work be superior. Since good work

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imposes severe exactions on the dentist, he in turn is compelled to impose exactions on his patients. All these things tend to impress the public with the value of his services far more than an easy, slip-shod, too accommodating disposition. Patients soon perceive that their dentist is fully alive to his responsibilities, and they will readily co-operate with him to secure the best results.

In our conventions, such subjects as this we have chosen are treated from an ideal stand-point. Operations are assumed to be mechanically perfect. It is assumed that failure occurs despite the utmost pain-taking. This is all very well, but we have assumed that the majority of failures take place for lack of pain-taking. If dentists would learn to be very exact and very exacting, inquiries into the causes of failure around the margins of ideal fillings would be less frequent.

APPLYING THE RUBBER DAM.

DR. A. H. BROCKWAY, NEW YORK.

For the best results are necessary a good quality of sheet-rubber of medium thickness, and preferably of dark color; punches of at least three sizes, for making the holes; suitable clamps and holders, with which to retain the rubber in position, and an *assistant*. I think it is clearly demonstrable that a proper assistant adds to anyone's efficiency fifteen to twenty-five per cent.

Some years ago I saw advertised an article of white rubber, and thinking this would be a decided improvement, I sent for some. Great was my disappointment. The process of whitening had seemed to injure its elasticity, making it more difficult to adjust. But a more serious objection was its lack of contrast with the color of the teeth, which gave the part to be operated on a blurred appearance. To make the holes in the dam, there is nothing better than a hollow steel punch. A form devised many years since by Dr. F. W. Dolbeare—in which three sizes are set on a triangular plate—is as convenient and effective as can be desired.

Such a clamp should be selected as will hold the rubber well away from the tooth without needlessly pressing on the gum; often one having a little lug on the jaw, to prevent it from slipping down on the neck of the tooth, will be found very serviceable.

To illustrate the method of applying the dam, let us suppose the operations are to be made on the second and third molars of the lower jaw, left side. Carefully pass waxed floss-silk between these teeth and those anterior to the right cupid, removing tartar. Select a piece of rubber about eight by ten inches in size, spread it on any smooth surface, and punch the hole for the third molar three or four inches from the upper, and at least two inches from the

right-hand, edge of the piece,—punching in succession the holes for the remaining teeth around to and including the incisors ; using the largest size punch for the molars, the second size for the bicuspids and cuspid, and the smallest for the incisors. It will be noticed in normal cases this will provide for inclosing ten teeth, and the objection will perhaps be made that this is unnecessary and will take needless time. Many are content with covering the teeth to be operated on and one or two of its neighbors ; but I think this unwise, because a proper freedom of view of the parts cannot thus be obtained, and the time required to make the additional holes and slip the teeth through them is so little as to be scarcely worth considering.

Having made ready the dam, the under surface in the line of the holes should be touched with wetted soap, which will greatly facilitate its adjustment, and the operator, taking his position nearly behind and a little above the patient, should slip the rubber first over the first lateral incisor, and in succession over all the other teeth, being assisted in this by the attendant with waxed floss-silk. Reaching and inclosing the third molar, the operator should hold the dam in position while the assistant slips over the tooth a proper clamp. The free edges of the rubber should now be drawn and held back from the corners of the mouth by a suitable holder,—such as Dr. Perry's or Lewis's,—and any loose edges likely to interfere with a good view of the work should be fastened down with a small weight. Where it is necessary to expose the neck of the tooth, a ligature of waxed floss-silk should be tied around it, and to the free ends a weight attached. If the ligature be tied with a surgeon's knot, it will retain its place. I must speak in condemnation of the practice of tying several teeth besides those to be operated on, and leaving them in this condition for hours. It is needless, and can scarcely fail to be injurious. Should the rubber be inclined to slip from any of the teeth, a better way to prevent it than to ligate, as described above, is to tie a small piece of punk to the end of a ligature and draw it between the teeth at the point needed. Still another way is to warm a piece of wax, or a mixture of wax and gum damar, and press it against the teeth so as to make it stick, thus holding the rubber ; care being taken to have the teeth to which it is applied quite dry. This preparation is also very useful for stopping any puncture that may accidentally be made in the dam.

With slight modifications, the same procedure may be adopted in other locations ; securing ample room and light, with the least possible annoyance from obtrusive folds and flaps.—*Cosmos*.

“ What are the last teeth that come ? ” asked a teacher of her class in physiology.” “ False teeth, mum,” replied a boy who had just waked up on the back seat.

CAUSES OF MY FAILURES.

DR. W. G. A. BONWILL, PHILADELPHIA.

First—not commencing soon enough after the teeth were in position, thus allowing decay too much headway.

Second—where I did not cut away sufficient of the teeth to completely destroy capillary force.

With some of my older patients, when using the disk, I found the decay so far progressed that I was unable to cut it out completely, without too much sacrifice, and yet it had not gone far enough to fill. Such, I had to allow to go over till another six months. These patients occasionally fell into the hands of other operators, and they, not knowing the actual circumstances, said at once, "Here is a failure for Bonwill. It has decayed since he did it."

When I practice true anticipation, it is from the second or third year of childhood, and on till the sixteenth year. To guarantee success, my patients must see me every six months, and some every three months, or when a temporary tooth is lost. Each separation is marked on my chart, and the condition of all the surfaces. In many young subjects, the gums so cover the teeth as to prevent complete treatment at the first sitting. I do the best I can, and watch closely. With nearly all the teeth of the present generation of city children, I cannot feel that security I desire, if the teeth have been in contact three months. No one can form any true estimate of the extent to which caries has gone, till he has once attempted to anticipate it, when he will find he cannot commence too early. To delay is to make work doubtful.

If by early action I have made thorough self-cleansing surfaces by my mode—not Arthur's—and no room is allowed for secretion at any one point, and the oral fluids can circulate freely, then I am sure of success. If from circumstances attending the case I have not been able to carry out these principles, then I must watch closely—and I know just where to go to look for it—not on any one of the cut surfaces, but just near the point of contact, which was not made quite pointed enough, or decay had already commenced too near the point on which I had depended for keeping the teeth apart. The habits of society are such that cleanliness is not observed, and the foods eaten are so fruitful of death by fermentation, that, till the eighteenth year, we must not rest.

If you depend on me to-day to say whether there is any hope for the preservation from decay without fillings, from this method, and whether I would recommend it for general adoption, I respond that, so far as my practice indicates, I am positive that in no way am I benefiting my patients so much with the surety of the future success as by anticipation. Yet I shudder when it goes into the hands of the average-

practitioner, who is unable, both by nature and education, to practice any system of dentistry. But, with intelligence and judgment combined, in one who is conscientious of his reputation and his patient's greatest welfare, I am willing to trust results, after he has once seen the plan practiced and fully demonstrated, and has enginery by which he can do it. The principal fear I have, is not in cutting too much, but in not going far enough.

Aside from all else, there is one consolation attending it: should you not be successful, and are compelled to fill,—and that, either by contour or flat self-cleansing surface,—your tooth is in far better condition than if not cut early, when decay was small; decay too is observed sooner by both patient and operator, and there are no such breaches to fill as when allowed to run on till the cervix and nearly all the approximal surfaces are involved. So long as the gum is sound, and fills the wide interstice between each tooth, no decay will ever commence on any portion of the wall which it covers. In cases where decay commenced near the grinding surface, and went toward the cervix, its progress was checked when it reached there, and only subdued when the whole inside of the crown was chiseled out.

Then, to attain the end I have in view, you have merely to help nature rasp down the broad, flat approximal surfaces, and cut off from both buccal and palatal surfaces enough to leave a delicate and decisive point on that approximal wall but so as not at any time to remove the enamel entire, but to so shape the faces as to leave no cause for the secretion of food, and, allow the point to be nearly midway the face, to prevent rotating on its axis.

Permanent molars, are decayed by their contact with the temporary second molars. This observation led me to commence work with children of two years, and by true anticipation even of the temporary, to allow no caries to have a commencement. Thus, step by step, I went, till I feared to allow any—almost any—of the children of my families to go unchallenged.—*Odon. So. of Penn.*

The Central Dental Association of Northern New Jersey is making its mark. We are glad to see it is kept in the hands of the leading and more skilful dentists in that part of the state. For their last session they moved over bodily to New York, and had a profitable meeting at Daddy Atkinson's.

Dr. Newell Sill Jenkins, an American, who has been practising dentistry in Dresden for the past twenty years, has been decorated with the Grand Cross of the Order of Albert, first class, by the King of Saxony.

PROFESSIONAL ETIQUETTE.

[Editorial in *Med. and Den. Journal.*]

A patient came to a surgical clinic at the Rush Medical College to obtain Dr. Gunn's opinion of an operation which had been performed by another surgeon—simply to get his *opinion* about what had been done. Dr. Gunn put him out of the room at once, stating that it was not his place to criticise other surgeons. A lesson for dentists.—*Brophy.*

We have carefully considered the above extract in order to learn the lesson it purports to set forth, and we think we know what Dr. Brophy means to impress on his readers. The sentiment of the lines quoted is, however, liable to mislead, unless proper regard is had for modifying circumstances such as may be supposed to accompany instances like the one cited. It seems hardly probable that we are expected to receive as an axiom the proposition that a patient has no right to investigate, notwithstanding the results of medical treatment may not accord with what he was encouraged by his medical adviser to expect. At all events, before deciding rashly to adopt a course so summary, with infringers on professional dignity, it would be well for the rank and file of any profession to consider a few points. * * *

It is our opinion that no general rule regulating matters of professional etiquette should be regarded as superseding the duty of exercising private judgment in particular cases. A less eminent man than Dr. Gunn might succeed only in making himself ridiculous by attempting to imitate this example. Motives should be well considered. A patient under treatment may think he has reason for misgivings, while still retaining such regard and respect for his physician as to be unwilling to risk doing him injustice, or even to hint at a lack of implicit confidence. If, under such circumstances, he should venture to consult some other authority, however irregular from a professional standpoint such a course might be deemed, it would hardly warrant abusive measures, we think. Be this as it may, we propose to reserve the expulsion method, in our dental practice, for the extremest of extreme cases. Will some brother dentist please try it on one of the class of patrons who have a large amount of work done, leaving one small cavity for a future (indefinite) sitting, and then make that an excuse for deferring payment of the bill, a year? If the man won't come to your office to be "put out," go and put him out of his own office.

Our second extract more directly concerns dentists:

"It is not our business to answer questions (unless before a court) as to the operations of another operator. Our business is to say what needs to be done, and to do it. The public have no right to ask our opinion of operations they may have had performed, and we certainly have no business to answer such inquiries."—*Cushing.*

Dr. Cushing's obvious aim is to assert the right of the dentist to

exemption from criticisms such as might weaken the confidence of his patrons in him. It would seem, however, difficult at all times to adhere to the letter or even the spirit of his admonition. In proceeding "to do what needs to be done" the dentist may find it necessary to undo what has already been done by another dentist, in which event it follows that he virtually commits himself to an opinion (not favorable either) of what has been done. But not to be captious, we see no great harm in answering many questions such as may not necessarily imply on the part of the inquirer an opinion derogatory to another dentist. It may be, however, that Dr. Cushing would regard strict consistency with his expressed views, as requiring the dentist to decline to do over any other dentist's operations. In that case it devolves on the dentist to refer the patient back to the dentist from whom he came. This is actually done, oftentimes, still it is not always possible, for obvious reasons, foremost among which is the simple fact the patient declines to go. He may even be so discreet as to avoid any reference to his former dentist, in which case it would seem the dentist of his second choice ought to feel at liberty to accept the situation and do what his judgment dictates as necessary. By a little artful commendation of a former dentist, coupled to a not-too-extreme self-depreciation, we know of instances in which dentists have hopelessly entangled other dentists' patrons; from which it might be argued that the rules of professional courtesy need modifying. We have more than once sounded the praises of neighboring dentists into deaf ears. The ears usually belonged to "shoppers," who had been the round of our neighbors, hoping to get a hundred dollars' worth of professional service for seventy-five cents. The English language so abounds in material for constructing phrases suited to accomplish the dentist's purpose of evading a satisfactory answer to over-inquisitive people, that we should think any ingenious dentist ought to be able to avoid disparagement of a professional brother, while scheming to steal his patients. But we must not trifle with this subject. While we suspect that physicians and dentists are sometimes over-sensitive, and quick to resent affronts which were not intended, we appreciate the stand Dr. Cushing takes in behalf of dentists. In their application to certain classes of callers, his restrictions are eminently appropriate. The dentist feels intuitively the warning to be on his guard, when a caller requests him to examine and make an estimate of the price of operations performed by another dentist. If he be a man of delicate feelings he at once feels affronted, and yet exactly why, he might be unable on the instant to say. He perceives that there is an impropriety in it. It is not difficult to discover why. The applicant's manner implies that he is dissatisfied, not with the character of the operations, but with the amount of his den-

tist's bill. Every dentist knows by experience, that nine times in ten the spirit that impels an individual to resort to one-sided arbitration, is indicative of a small, narrow, unappreciative disposition. The dentist would hardly expect such an applicant to regard favorable a suggestion that he be paid for the trouble of making the required examination, presuming that he were disposed and able to humor such a request. He rightly conjectures that the inquirer would not hesitate to get as much as possible for as little as possible from any dentist, not excepting himself. Such applicants should be respectfully dismissed. We have no right to set a price on another dentist's operations. We have no right to say operations might have been better performed, because, if for no other reason, it is not possible to know that, and even if it were possible, it is never necessary to say it. It ought not to be any great surprise to a dentist who encourages people to ask his judgment of other dentists and their operations, to discover that his opinion does not seem to be regarded as final and infallible, after all. That, he is pretty sure to discover, after awhile.

THE SENSE OF TASTE.

BY E. J. LILLY, M.D., D.D.S., CIRCLEVILLE, O.

All knowledge of external nature is primarily derived through the medium of the senses; but the length of time required for some of the senses to convey intelligence to us is far greater than that needed by others, taste perceptions being relatively slow. Yet the majority of persons eat as though they had no other thought than satisfying the wants of the system, and consequently derive very little pleasure from the process. As a witty writer says: "The average American in the average American restaurant, eats his dinner in the average time of six minutes and forty-five seconds. He bolts in at the door, bolts his dinner, and then bolts out, as if he knew he had swallowed poison, and must find a doctor and a stomach-pump, or die."

Compared with other modes of motion, that which gives rise to sensation is very slow, the impulse traveling along the nerves at the rate of only one hundred and fifty feet per second.

Physiological analysis has clearly brought out the fact that most of the tastes we perceive proceed from the combination of olfactory sensations with a small number of gustatory sensations. In reality there are but four primitive and radical tastes—sweet, sour, salt, and bitter. A very simple experiment will serve to prove this fact. If, to neutralize the sense of smell, we keep the nostrils closed when tasting a certain number of sapid substances, the taste perceived, if any, is invariably reduced to one of the four just mentioned.

"Tastes differ." What would Pythagoras have said to our national

dish of pork and beans ! or what shall we say to explain the Japanese prejudice against milk, the Papuan's partiality for large white caterpillars, or the Chinese love for bird's nests and rats? The Turk's shudder at seeing a Frank swallow oysters ; and even in this land of oyster-beds we find individuals with similar dislikes. And still, if some wide-spread cause necessitated a change in a nation's diet, it would very readily be brought about, for tastes are quite easily acquired, this sense being as susceptible of cultivation as any other. Some articles of food are positively repugnant to the palate when first tasted, but many afterward become real delicacies ; others again are spontaneously agreeable, and may so delight the palate that all other pleasures and pains are for the time unnoticed. This was the case with the Chinaman who, as Charles Lamb tells us in one of his delightful essays, first had the pleasure of tasting roast pork.

Since that time this dish has been both praised and condemned without limit. Moses prohibited the eating of pork and rabbit flesh, and many of his followers preferred death to the obnoxious diet ; but our Saxon forefathers exalted the pigs-feet of Valhalla as the supreme reward of heroic virtue, and, dying, the Beresark could grin through his tortures at the thought of celestial spare-ribs. But roast pork, delicious as it undoubtedly is, would in time become insipid to the palate. The man that lives on one kind of food, must deteriorate ; the student who gives all his thoughts to one idea will become crotchety ; the devotee to a single phase of religious belief will in time become a bigot, which is but another name for monomaniac. Sameness in anything becomes unendurable, and in nothing is this truer than in regard to the food we consume.

No one thing has more direct influence over our physical and moral well-being than the preparation of the food we eat ; and the degree of benefit we derive from it depends on the skill displayed in the preparation. Apropos of cooking, a story that is going the rounds of the papers reads thus : The angel of death once visited a down-east household, and the patient wife went away with him. Her spirit mounted through the ether till it came to the golden portals of paradise. The pearly gates swung open, and St. Peter appeared, holding his keys of office :

“ Well, my good woman, what have you done that you should be admitted to the company of the blest ? ”

“ Gracious, sir ! I—I—I—well, I know I was a poor, weak woman when I lived, and I did not do much ! ” was the hesitating reply.

Tell me but one deed ; one act of goodness performed, and heaven opens for you ! Speak but one deed ! ”

“ Well, my husband and the other men folks said my cooking was good.”

"What? Good cooking!" demanded the surprised Apostle, as he dropped his keys. "Madam, walk right in! Pick out the finest diamond crown in the lot; take the best golden harp you can find, and go up to the front seat! You can have anything you want! Why, you have saved more souls from destruction than a box of tracts! Pass in!"

And the gates of pearl closed, with the Apostle in the act of making a low obeisance to the new comer.

And so say we. Of all good women who should be praised, a good cook is the most deserving, for she does so much to make life worth living.

"We may live without poetry, music and art;
We may live without conscience; and live without heart;
We may live without friends; we may live without books;
But civilized man cannot live without cooks.

He may live without books,—what is knowledge but grieving?
He may live without hope,—what is hope but deceiving?
He may live without love,—what is passion but pining?
But where is the man that can live without dining?"

Ohio State Journal.

THE SENSITIVENESS OF DENTINE.

C. A. BARSTOW, ENG.

I have heard it said enamel may be sensitive, and though I do not deny this, I think it is chiefly where the enamel fibers at their junction with the dentine are separated, and the dentinal tubes protrude from the dentine and fill the spaces thus formed; then, when the enamel is cut with a chisel or a bur, extreme sensitiveness is felt. That enamel is alive I am quite prepared to believe, but it is very rarely we meet with a case of true sensitive enamel. I can quite understand also how the enamel may act as a conductor in conveying heat or cold to the dentine. If a piece of enamel is broken from a healthy tooth, the surface immediately beneath this is extremely sensitive either to heat or cold, or to the touch of any instrument, to anything either very sweet or salt or acid. Even the slightest pressure of the tongue will cause pain, and it is a fact of every-day observation that we find after removing from a carious tooth the affected portion of enamel, we come on this sensitive layer, and it often gives us great trouble. It will be noticed that in caries we meet with a variety of colours in the dentine, and it will be found that the degree of sensation is generally in proportion to the colour: those teeth, the dentine of which is light in colour and soft in texture will be found to be most sensitive, and those teeth having dark, in fact almost black, dentine, which is very hard, will be found almost free from any sensation. There are, however,

exceptions to this rule. Occasionally we meet with one particular spot in a tooth which is more sensitive than the rest of the dentine; or the sensation may be uniform throughout the cavity. The teeth of the same person may be more sensitive at one time than at another, caused no doubt to the condition of the general nervous system, and those teeth which decay most rapidly are usually the most sensitive. If one part of a tooth may be said to be more sensitive than another it is the neck, where the enamel and cementum overlap; the reason of this I will endeavour to explain further on. Patients of a generally nervous temperament usually have sensitive teeth; those of a sanguine temperament vary, some being particularly sensitive, others do not seem to feel anything. Before dealing with the cause of all this sensation, let me refer to Erosion and Abrasion. In Erosion the anterior surfaces of the upper incisors present the appearance of having had an elliptical piece cut out close to the gum edge; the cavity thus formed is shallow, and the surface highly polished. In these the dentine is nearly always acutely sensitive to the touch of any instrument or to heat or cold. In Abrasion, where teeth are worn away on their grinding surfaces through biting edge to edge, and the dentine thereby exposed, a process is set up in the tooth whereby secondary dentine is formed and the pulp is thus protected and sensation will be found to be very slight.

The teeth of the young are far more sensitive than those of the old. Temporary teeth are as a rule more sensitive than the permanent, because the pulps of temporary teeth are large in proportion to the teeth and consequently nearer the surface of the tooth. In the teeth of the old, the dentinal tubes at the periphery of the dentine are generally obliterated, for, as Dr. Beale states: the hollows of the tubes are largest nearest the pulp, and smallest at the periphery of the tooth, (the oldest part) and calcification is still slowly going on even in advanced life, leading to the peripheral obliteration of the tubes. The pulp cavities in these teeth also lessen by deposition of secondary dentine or the pulp may shrivel and degenerate, the arteries and veins become indistinguishable and their coats kept rigid and distended by irregular calcareous depositions on them, and the nerves degenerate also, thus putting an end to all sensation.

Many theories have been promulgated in explanation of the sensibility of dentine. Taft, in his "Operative Dentistry," looks on it as being true inflammation, but in this I cannot agree; I think it is rather a normal condition of a tooth. We have but one symptom of the four typical of true inflammation,—heat, redness, and swelling are absent. [May we not rather question the definition?—Ed. ITEMS.]

Magitot states that he has satisfied himself that the nerves of the

pulp become continuous with the branched, stellate cells which form a layer beneath the odontoblasts, and through the medium of these cells with the odontoblasts, and as Mr. C. S. Tomes says:—"If this view of their relation to the nerves be correct, the sensitiveness of the dentine would be fully explained without the necessity for the supposition that actual nerve fibers enter it, for the dentinal fibrils themselves would be in a measure prolongations of the nerves. Mr. Tomes also states, "There can be no question that the sensitiveness of dentine is caused by the presence of soft organized tissue in the tubes, and is not a mere transmission of vibrations to the pulp through a fluid or other inert conductor. The peripheral sensitiveness of a tooth can be allayed by local applications which it would be absurd to suppose were themselves conducted to the pulp; moreover it is within the experience of every operator, that after the removal of a very sensitive layer of caries you often come down on dentine which though nearer to the pulp is far less sensitive, a condition of quite inexplicable, except on the supposition of a different local condition of the contents of the tubes. Nay-smith, in his work on the teeth, asks what is the cause of the pain, and follows this by saying, "The wory (dentine) contains numerous fibers of animal matter, composed of the nuclei of cells arranged in linear order, and these must be the agents of transmission of sensation; though it must be admitted that no direct communication can be discovered between them and the nervous filaments." Salter gives the following explanation regarding the extreme sensitiveness beneath the enamel. He states that the outer layer of dentine is often imperfectly calcified, and that some of the tissue here remains soft and more impressible; for the same exalted sensibility is displayed when the surface of any calcified dentine is acted on by acids and also in pale, soft decay.

. Mr. Coleman gives no explanation beyond the generally accepted one, that the dentinal fibrils of Tomes are the cause of the sensitiveness.

It is our American *confrère* Eödecker who gives us the greatest insight into the minute structure of a tooth and the arrangement of living matter therein.

In the *Dental Cosmos*, vol. xx., 1878, is a paper entitled, "The Distribution of Living Matter in Human Dentine," and I think the views here expressed will explain the cause of all sensation that we may find in dentine. Speaking of the structure of dentine, Eödecker says, "each canaliculus," *i. e.*, in dental tube, "contains a fiber. These fibers when viewed with a power of 500 on good chromic acid specimens, exhibit a pale-gray colour, and run through the midst of the tubuli without ramification to the surface of the dentine." The

outlines of the fibers present a fringed appearance, and in specimens treated with chloride of gold, the fibers and their offshoots show a distinct violet colour characteristic of living matter within protoplasmic formations. The space between the fiber and the wall of the canalculus remains unstained, and the basis substance between the tubuli only assumes a slight violet tinge.

In the other sections examined with high powers from 1,000 to 1,500 diameters (immersion lenses), Fölecker finds the dentinal tubes running in a wavy course through the basis substance or matrix and bifurcated as a rule only on the periphery of the dentine. Each tube contains a central slightly beaded fiber which sends delicate thorn-like elongations through the light space between the central fiber and the wall of the tube.

The smallest thorns spring in an almost vertical direction from the dentinal fiber while somewhat larger offshoots may run obliquely through the basis substance, and directly unite neighbouring fibers with each other in the vicinity of the enamel and cementum. The basis substance shows a net-like structure, which is formed by the light spaces around the dentinal fibers, sending delicate elongations into the basis substance, in which through repeated branching, a light network is established. The meshes of this network contain the decalcified glue-giving basis substance.

"The dentinal fibers are either in direct connection with coarser offshoots of the protoplasmic bodies of the cementum, or the light network of the basis substance of the dentine is in connection with that of the basis substance of the cementum."

Where the dentine is in contact with the pulp, the dentinal fibers directly communicate with the odontoblasts (John Tomes) in a growing tooth, and with the protoplasmic bodies of the pulp in a fully developed condition where no regular odontoblasts can be seen.

In cross sections the dentinal tubes are visible as round or oblong holes, the center being occupied by the dentinal fiber.

The periphery of the tube is sharply marked and interrupted by light offshoots leading into the light network, which pierces the basis substance between the canalliculi. The dentinal fibers send delicate offshoots through the tubes respectively toward the mouth of the light interruptions in their walls. Bödecker states that in slightly oblique sections he has succeeded, by cautiously changing the focus, in seeing starlike radiated offshoots up to five in number, all rising from a single dentinal fiber. He also says, "toward the boundary between the dentine and enamel, and dentine and cementum the dentinal canalliculi ramify, and according to their ramifications also the dentinal fibers bifurcate, becoming thinner the nearer to the surface of the dentine."

Both longitudinal and transverse sections of this part of the dentine show details identical with the main mass of the dentine, the only difference being that near the periphery or outward surface the fibers are more delicate and more closely packed.

This, I think, fully accounts for the extreme sensitiveness immediately beneath the enamel and also at the neck, in fact, anywhere at the periphery of the dentine, for we know that most sensation is felt at nerve terminations and this is really what dentinal fibers are.

The interglobular spaces on the periphery of dentine Bödecker considers as remnants of the embryonic condition of the dentine. They sometimes contain protoplasm and the dentinal fibers enter the protoplasmic bodies, each fiber being united with the network of the protoplasm by delicate thornlike projections. Bödecker also goes on to show that the dentinal fibers also become continuous with the lacunæ and protoplasm of the cementum. He says, "The connection between dentine and cementum is established either by a gradual change of one tissue into the other without a distinct line of demarcation or there exists a boundary formed by a variably marked wavy line presenting irregular bay-like excavation, filled by a substance of the structure of cementum.

A peculiar phenomenon may be noticed in a tooth from which some part, say one-eighth inch, of the pulp has been removed. If the dentine at the upper surface of the tooth be cut with an excavator it may be found to be sensitive though its immediate connection with the pulp has been cut off. This is explained quite easily by the fact that the dentinal fibers inosculate with those lower down in the tooth and thus sensation is kept up. If the whole pulp be removed then sensation in the dentine will be practically at an end, though instances have been known where sensation was felt and this can only be explained by the theory of Bodecker, that the dentinal fibrils are in direct connection with the protoplasm and nervous structure of the periosteum. Having then dealt with the cause of this sensibility the next thing is how are we to overcome it?—*British Journal of Dental Science.*

Doctor Welch:—I have a patient who can't wear his plate on account of nausea. He eats with them, but has to take them out as soon as he gets done eating, or lose his breakfast in a few minutes. He can wear the plate sometimes an hour, but generally only a few minutes, when he says he feels as if something was sticking in his palate, and then he has to take out the plate. Yet the plate fits well, doesn't come loose, even when he vomits, and don't extend back far, not near to the soft palate. I know of several people who can't wear a plate on account of nausea, and would like to know what can be done for them. Glad to see the ITEMS improving every year.

J. P. COULT.

DIAGNOSIS.

[Editorial in *Dental Register*.]

The importance of correct diagnosis in dental disease is often underrated ; physicians treat for the wrong disease, and dentists make mistakes. A course of medication addressed to the heart, where the stomach alone is at fault, is no worse than an application of carbolic acid, to cure aching caused by a dead pulp in a sealed canal. Both are mistakes in practice, founded upon errors in diagnosis.

It is all important to the patient that a diagnosis of his case be made correctly, and at once. A mistake committed at the starting may constitute the foundation for a long course of false treatment. It is indeed better to do nothing than to do something which bears no curative relation to the morbid condition. If the treatment be not curative, it is likely to be damaging. It thus appears that too much stress cannot be put upon diagnosis.

Diagnosis is frequently the most difficult and perplexing thing which either the medical or dental practitioner is called on to accomplish. There sometimes occur in the practice of our dental specialty cases of pain in the maxillary bones, periosteal disturbances in the roots of teeth, affection of the fifth pair of nerves, or the discharges of pus from obscure sources, the correct understanding of which taxes the highest powers of genius. When the morbid condition is once discovered, the work is, for the most part easy; to tell *where* to treat and *what* to treat is the more difficult duty of the diagnostician.

In diagnosing an obscure case the practitioner must often summon to his aid all the anatomy, physiology, pathology, and histology, that he is master of. A patient comes, and is in pain. The most diligent inquiry after facts, the most rigid scrutiny of the sufferer's testimony, the keenest penetration, and the most rigid adherence to the ratiocinative and inductive methods of science, will not always conduct the inquirer to the true cause of the malady.

The numerous symptoms of the patient must not be considered in the order communicated ; they must be redistributed in the mind of the practitioner into their logical arrangement. The non-essential symptoms must be eliminated. Those which carry a real significance must be interpreted. Nor will it answer to give a too arbitrary interpretation since the symptoms by which a disease is to be recognized are not invariable.

Many modifying circumstances and conditions are to be held constantly before the mind. Constitutional peculiarities and idiosyncrasies, temperament, diathesis, and heredity are a kind of personal lens through which each patient must be viewed. These conditions, varying in different persons, proportionally modify the course of the *same* malady in *different* patients.

It is therefore true that those diagnosticians who have sought for pathognomonic symptoms have in general been in the wrong. There is no such thing as pathognomonic symptom for every disease. Much depends on the mass of symptomatic evidence; much on the conjunction of different symptoms; much on the order of succession in which they arise. The absence of a symptom may be as significant as its presence.

Analgesia. An article by Dr. Bonwill in the December number of Items of Interest, suggesting a new method of extracting teeth has attracted much attention among the practitioners of the dental profession. Briefly reviewed, the data of this method are as follows: The patient breathes very fast (at the rate of 100 puffs a minute) and thus so thoroughly fills his system with oxygen that there comes a second of partial insensibility to pain; this second is just before the exhaustion naturally consequent on such rapid breathing, and since the strongest cannot breathe at this rate much more than a minute, this lack of sensation will occur in average cases near the fiftieth breath, and this auspicious moment must be chosen by the dentist for extracting the tooth,—a sign being given by the patient.

Like many theories this *sounded* well as projected by Dr. Bonwill. Unlike many theories it also *works* well. It has been tried in western New York. I wish to attest to its success in practice as the first on whom it has been tried in western New York.

This method of tooth extracting by *Analgesia* is not painless, as the name suggests, but greatly alleviates the pain. The rapid breathing may be accomplished without the slightest danger. Those who once try it will gladly join with me in a vote of thanks to the scientist who in an onward step has so successfully trodden beyond one necessity for anesthetics, the recovery from the influence of which is more than dubious.

“WEB.”

Analgesia. Seeing an article in some back number of ITEMS about “Analgesia,” I thought I would try it. My first experiment was a perfect success. My next developed to me astonishing results.

The patient was a young man about twenty-two years old. Light complexioned, full blooded and of perfect health, had never had an ache in his life, except a toothache.

On rapidly breathing about 70 breaths per minute, in two minutes he was perfectly insensible. Extracting the tooth, a right first upper molar, caused no pain though the tooth broke. He soon recovered enough to enable him to walk home. Immediately on getting there he fell into a profound sleep, from which his family could not arouse him. Becoming alarmed they sent for me. I found him sleeping

quietly, breathing easy and pulse normal. Occasionally there was a violent gripping of the hands and drawing of the arms. I applied ice cold to his head and spine, after a half an hour of pretty rough handling got him sufficiently aroused so that two of us could lead him around out of doors, when he gradually gained consciousness. The next day he was all right, but had no recollection of what had taken place till he found himself being hustled around the front yard some three hours later, as described.

Can any reader of the ITEMS throw light on the case, or relate anything similar?

Salt Lake City.

H. H. ELDRIDGE,

Keeping a Record of Work. I am starting a new set of books, journal and ledger, one for general expenses, the other for plate work. Everything goes down in the journal, which answers also for a day-book; but by the ledger I intend only to register operations done at the chair, and for any running accounts. In the ledger I shall use dental cuts printed by a rubber stamp, one or more on a page as needed.

In operating for the different members of a family I prefer to register each patient separately, having its own cut for future reference, so there can be no after dispute as to where and when each operation was performed, also the amount charged.

But there is one point that bothers me. The head of the family settles these several accounts. He himself may or may not be getting anything done. He makes partial cash payments from time to time, or as is sometimes the case, if a merchant, he desires a portion traded out in his particular line of business. Now in posting from the journal to the ledger how can I simplify my book-keeping and yet have each individual account show paid up on final settlement?

Mr. Editor, what was your own methods when in practice?

W.

Mending a Broken Artificial Tooth. Sometimes a tooth is broken from the plate by the pins pulling out and it is difficult to find one to replace the broken one. A good repair may be made by rubber corundum points. Drill a hole through the broken tooth between the pin holes, countersink the *front side* so that a common pin head will stand below the surface. Now drill through the plate on a line with the hole in the tooth and countersink the inside. Put a common pin to project a little through the hole bend the inside end slightly. Put some osartifical inside the tooth and, with the beaks of forceps on the inside and on the out, draw the tooth tight in place by bending the end of the pin up against the plate. Fill the countersinks inside and out with amalgam and the repair is complete. J. W. PLUMMER.

MEETINGS OF STATE DENTAL SOCIETIES.

Alabama, Montgomery, Tuesday, April 13; California, San Francisco, Tuesday, July 20; Connecticut, Hartford, Tuesday, May 18; Georgia, Savannah, Tuesday, May 11; Illinois, Quincy, Tuesday, May 11; Indiana, Indianapolis, Tuesday, June 29; Iowa, Iowa City, Tuesday, May 4; Kentucky, Louisville, Tuesday, June 1; Kansas, Topeka, Tuesday, May 4; Mad River Valley, Dayton, Tuesday, May 18; Minnesota, Winona, Wednesday, May 26; Missouri, Sweet Springs, Tuesday, July 6; Nebraska, Beatrice, Tuesday, May 19; New Jersey, Long Branch, Wednesday, July 20; North Carolina, Raleigh, Tuesday, June 1; Pennsylvania, Cresson Springs, Tuesday, July 27; South Carolina, Cheraw, Tuesday, June 1; Southern Dental, Nashville, Tuesday, July 27; Texas, Austin, Tuesday, May 4; New York, Albany, Wednesday, May 12; Wisconsin, Milwaukee, Tuesday, July 20.

IOWA SOCIETY.

The twenty-fourth annual meeting of this society will be held in Iowa City, beginning the first Tuesday of May, continuing four days.

The clinical part of the program, superintended by Dr. R. L. Cochran, will far excel anything the Society has ever had. All late advances made by the profession will receive attention. Dr. Atkinson, of New York, will demonstrate "Sponge grafting." There will be clinics in various methods of crown work, in the use of matrices for filling, and in filling with the electric mallet. Also, in the use of gold, and irridium and gold, and platinum for filling where exposed to wear. Continuous gum work will be demonstrated. Filling root canals will receive attention from able operators, also the best method of operating for pyorrhea alveolaris and disease of the antrum. Methods of regulating teeth will be demonstrated. A cleft palate and its obturator will be exhibited, also an artificial ear. Altogether this meeting will be as full of interest to dentists as any meeting ever held by a State Society. A cordial invitation to dentists from other States as well as to those of our own.

Officers : President A. Morsman, Iowa City; Vice President R. L. Cochran, Burlington; Secretary J. B. Monfort, Fairfield; Treasurer J. S. Kulp, Muscatine.

J. B. MONFORT, Secretary.

The Chicago College of Dental Surgery are to have a spring term commencing April 7, preliminary to the winter course and is designed to supersede the necessity of the student spending a year in a dental office.

Virginia has now a Dental law.

SAVING PULPLESS TEETH.

I have read with pleasure the article in the ITEMS of February, 1886, entitled, "Effects of pulpless teeth when left in the jaw."

This has been a subject of interest to me for many years, and one in which I have had quite a long and successful experience. I agree with the remarks made by Dr. J. Morgan Howe in the discussion, and I am sorry Dr. Sexton got hold of such unsatisfactory cases.

I do not deny that teeth are not factors in reflex disturbances, (pulpless teeth especially) but a pulpless tooth can be put in such a healthy condition as not to act as a factor in any reflex disturbance. I have seen teeth that had been treated and filled by other dentists, which had been kept in the mouth for years without giving any trouble directly or indirectly, and I have filled many that have never given the slightest trouble.

I have a lady patient in my hands now, that came to me twelve or thirteen years ago, very much run down in health, with her nervous system prostrated and having four or five pulpless teeth in her mouth, three of which were badly abscessed, her face much swollen. I lanced the gums over the offending teeth and began a course of treatment which in time put her teeth in a healthy condition. I then filled all five and they have never since given her trouble. I have seen her several times a year, since I filled the teeth. They are still standing.

I could cite a number of similar cases if necessary. A pulpless tooth left to itself and not attended to is very often a source of much trouble and annoyance, and more especially one which has been filled. As I have often seen them, merely having a piece of cotton saturated with some disinfectant in the cavity, and then a filling over it, leaving the fangs empty. This is all wrong and no tooth can be saved in this way—neither can a tooth be hurriedly treated, even after destroying the nerve, and filled so as not to cause future trouble. It must be rendered aseptic, and this cannot be done in two or three treatments. It is impossible even with the greatest care and skill to save every pulpless tooth, but with proper treatment we can save the majority, and that without trouble from reflex action.

Baltimore, Md.

J. J. WILLIAMS.

"Eye Sight" Ed. ITEMS; I have been greatly interested in your excellent articles on the use or abuse of needless words, and if it be allowable may I criticise the critic? In the March number of ITEMS you have an editorial on "Eyesight." Is it not an *oversight* on your part? Light refers to the eye, and, of course is understood. If we say "eyesight" why not say ear-hear and nose-smell?

Clinton, N. J.

G. W. EVERETT.

Is type affected by extraction? Having carefully read the ITEMS OF INTEREST for February, I am impressed by the many good things it contains. While on the other hand I am pained to see men in this enlightened age write such trash for a dental journal as Dr. Van Horne's "interesting case in practice." A lad of fifteen summers is minus his superior laterals, and all because his grandfather had his laterals extracted to make room for his canines. "Is this not proof," says the doctor, "that we have labored toward deformity of future generations in trying to remedy present irregularities by extraction?" According to this theory it is a most fortunate thing for that lad that his grandfather did not have all his teeth extracted or else that poor boy might had to "gum it." It is a poor rule that won't work both ways. If we are to inherit mechanical deformities why won't it extend to our limbs as well as to our teeth? And if so, what is to prevent the Government from having pensioners as long as the world lasts?

Paterson, N. J.

W. H. PRUDEN.

In looking over the February number of "I. of I." (the best again), I notice the death of two of our most prominent and honored dentists:—S. C. Barnum, of Rubber Dam fame, and John M. Riggs, of Gas and Pyorrhea Alveolaric fame.

Now I would like to know if we cannot get pictures of these two men. I should like them to frame and hang on the walls of my office. I think others would like them.

I refer you to your item about the portrait of Dr. Barrett, in February number p. 90.

I feel so about these men, I should like to see their portraits, if I cannot see them. Why do you not have them to sell?

Morrisville. Vt.

J. A. ROBINSON.

The following resolution was adopted at the January meeting of the Chicago Dental Society, and the corresponding secretary was instructed to transmit a copy to your journal for publication:

Resolved, That this Society endorse the action of the Conference at Buffalo as regards the International Medical Congress.

The action is embodied in the following resolution:—

Resolved, That we as members of the dental profession deem it inexpedient to recommend the organization of a Section of Dental and Oral Surgery in the International Medical Congress of 1887 under the present circumstances.

P. J. KESTER,
Cor. Sec'y Chicago Dental Society.

Those who mold and move most the minds and the actions of men are seldom seen. They never head the procession.

For Our Patients.

FRUITS:

WHAT THEY CONTAIN, AND WHAT THEY ARE FOR.

The luxuriance of summer brings to us a great variety of fruits, which, like all other kinds of food, have intimate relations with the health of the entire body, and especially of the teeth.

From all time, artists and other lovers of beauty have paid attention to the colors of ripe fruits, but it is only in later years that chemists and microscopists have paid attention to their structure, composition and uses. An examination of the internal structure of fruits shows us some of the most beautiful objects in nature. That which appears to the naked eye as a solid, homogeneous mass, filling the interior of an apple, pear, or watermelon, expands under the microscope into a vast store-house, piled to the roof with the most exquisite little crystal globes, some perfectly clear and brilliant like the purest diamonds, and others flushed with rosy or amethystine stains. Each of these globes is a sealed flask full of the juice of the fruit.

Every agreeable fruit contains three principal elements, on the proper combination of which its attractiveness depends. These three are acid, sugar, and flavoring material.

The acids contained in fruits are numerous, but the principal are citric, malic, and tartaric.

The citric acid is that which exists in the orange, lemon, cranberry, raspberry, strawberry, red currant, and many others. When extracted, it is a transparent, crystalline solid, intensely sour, and without flavor. It is much used by physicians to make sour drinks for the sick.

The malic acid is contained in the apple and pear. The tartaric acid is the sour principle in grapes. After the wine is pressed out, a portion of the tartaric acid unites with the potash in the grape, and settles to the bottom of the cask in a solid form called tartar. From this the tartaric acid of commerce is obtained and used both in medicine and cookery. It closely resembles citric acid, but is more harsh to the taste.

These acids are capable, by long continued application, of dissolving the solid substance of the teeth, and, were there no provision of nature against it, we should pay for our enjoyment of fruit by the inevitable loss of these organs. It is the first faint traces of this corroding action which causes the teeth to feel rough and "set on edge" when very sour substances are eaten. For the same reason, a long continued excess in eating sour fruit causes tenderness of the teeth. There is a curious provision in nature, however, by which healthy constitutions protect the teeth from this result.

Ripe fruits contain not only acids, but also a small portion of

potash. When taken into the stomach, the acid, being a vegetable compound, is digested and destroyed, and rendered no longer an acid but nutritive material. The potash, on the contrary, being a mineral substance, cannot be thus destroyed, but is absorbed into the blood and circulates to every part of the system, rendering the blood alkaline. The alkalies of the blood being thus abundantly furnished to the salivary glands, ensure a constant alkaline character to the saliva, which flows into the mouth and instantly neutralizes any acid which the fruit may have left on the teeth. This singular provision of nature, however is perfect only in persons of good digestion. If the stomach is feeble, or the indulgence in fruit excessive the acids of the fruit are not destroyed : they pass into the intestines and are absorbed into the blood, diminishing its alkaline character, and depriving the saliva of its neutralizing elements. In such cases, the fruits exert a directly injurious effect on the teeth. Hence, one reason why a disordered stomach is apt to be accompanied by decay of the teeth.

The second class of ingredients in fruits consist of the sugars. Of these is the variety, called grape sugar. This is nutritious and agreeable, and promotive of good health ; it is not materially different from cane sugar.

The most interesting topic connected with fruits is the study of their flavors. Every plump, ruddy-cheeked berry is a chemical laboratory, in which little retorts of purest crystal and amethyst distil their delicate ethers, on the same principal the professor does in his laboratory.

All the finest and most delicate flavors of fruits consist of ethers closely similar in nature to the ether used by dentists. These vegetable ethers not only resemble that used in surgery in their composition and nature, but also in their effects on the system. The flavor of the pear, the pineapple, or the strawberry, if concentrated in large quantities, is capable of producing the profound sleep of chloroform, so that any surgical operation could be performed without the patient's knowledge. It might be even given to such excess as to cause a tranquil death ; and, though to

“ Die of a rose in aromatic pain.”

is a poetic fiction, a man may die of the aroma of a strawberry without pain. In small quantities, these ethers are gentle stimulants, slightly exhilarating the feelings and soothing some varieties of pain. As inhaled from or eaten with the fruit, the stimulant effect is scarcely perceptible, only serving to produce a delightful flavor and to gently excite to action the nerves of the digestive system.

Ethers are produced by chemists in the following manner : an acid and some alcohol are placed together in a glass retort, and by the action of one on the other, the ether is produced and distilled over in a

fragment vapor. The process of the ether manufacture in the fruit is the same in principle, only differing in the apparatus. The little crystal cells or globes inside the fruit are filled with a solution of acid and sugar. Between the cells are innumerable spaces through which the air circulates. The oxygen of the air, acting on the sugar of the cells, converts minute portions of it into alcohol. The acid of the cell instantly converts the alcohol into ether, which, being very volatile, exhales as a delicate fragrance into the air.

The fragrance of many fruits can be produced in the laboratory without the fruit itself being used in the operation. This manufacture is carried on by distilling various kinds of acids with alcohol and similar compounds. A great variety of ethers can thus be made, each having its own particular flavor. The manufacture of them has already become of considerable commercial importance. So perfect are some of these, that confectioners prefer them to the natural product for flavoring confectionery, the flavor made by art being actually more fruity than the fruit itself.

The following are among the articles most commonly manufactured :

Butyric ether—flavor of pineapples. Made by the action of butyric acid on alcohol.

Acetate of amyl—flavor of pears. An ether made by the action of vinegar on an organic product.

Valerianate amyl—flavor of apples. An ether made by the action of valerianic acid. This is manufactured and sold for the purpose of producing an apple flavor in whisky vinegar. The vinegar thus "doctored" is sold for genuine cider vinegar.

Enantie ether—flavor of grapes. An ether made by the action of enantie acid on alcohol. It is used very extensively in some forms in giving a grape flavor to artificial wines and brandies.

By various mixtures of these flavors, good imitations of strawberries, raspberries, etc., are produced. Nearly all the syrups used at second-rate soda fountains are flavored with these artificial ethers, and do not contain a drop of the juice of the fruit which they represent.

Owing to the fact that the natural fruits generally contain delicate mixtures of several ethers at once, it is seldom possible to make a perfectly exact imitation of the flavor; hence, nearly all the spurious syrups and wines can be detected by a practiced palate.

Another flavoring material found in many fruits consist of the essential or volatile oils, as the oil of the lemon, the oil of orange peel, and many others. These flavors are less delicate and more pungent to the taste than the former. They are prepared for separate use by distillation from the fruit.

The fruits of the peach and cherry contain a peculiar flavor, which, when examined, is found to be nothing else than the deadly poison, prussic acid. It exists, however, in such minute quantities, that it has no evil effect. Its actions on the system is directly the opposite of the stimulus of the ethers; the prussic acid is a sedative, and promotes a languid, soft pulse, and a slow beating of the heart.

Practically, then, fruits are highly beneficial to persons of good digestion. In proper quantities they furnish alkalies to the blood and saliva, which protect the teeth from the action of the acids. These alkalies, also, are natural stimulants to the liver, so that the steady use of fruits tends powerfully to prevent summer bilious attacks. The summer fruits, therefore, are, to a certain extent, the natural antidotes to summer diseases. Fragments of fruit skins and pulp sometimes lodge between the teeth, and, acting as a sponge to absorb and retain acids, keep these corroding juices in contact a long time with the enamel, ultimately penetrating it and causing decay. To obviate this evil, remove with the tooth brush or pick all such particles after eating.

Let all eat with reasonable freedom the ripe fruits and enjoy the delicious flavors which the Maker of all things has prepared for the promotion of health and enjoyment. A sound instinct points out this course to us, and the teachings of science confirm its mandates.—*W. W. Allport, in People's Dental Journal.*

DENTAL QUACKS AND QUACKERY.

IN ALLPORT'S PEOPLE'S DENTAL JOURNAL.

I have been striving for the past eighteen years or more to set the current of popular feeling against this class of impostors, by short lectures to my patients, describing the shams and shows set up in the place of skill and merit, but I despair of making any decided inroads on the desire for humbug which has become so wide-spread.

Barnum was logically correct in saying that the people were bound to be humbugged. The disposition on the part of the public to encourage this class of men, on the score of their reasonable charges, has become so general that it is next to useless to attempt any method of education by which they may be instructed so as to appreciate skill and thoroughness with remunerative prices, against pretensions on a grand scale and a *very moderate demand* for services.

In addition to the plea of moderate prices, is the recommendation so frequently coupled with it: "Our dentist is such a careful man, he doesn't hurt us at all." It would seem scarcely necessary to urge an argument against this fatal mistake of multitudes, who seem to regard the success of a dental operation to depend on what is in fact fatal to it; for, in the first place, no dentist can plug teeth properly, spending

as much time as will insure a successful operation, for such inadequate returns, and, secondly, it is rare that a cavity can be properly prepared to receive the plug without afflicting some pain.

Again, they *warrant* their work,—leaving the impression with the patient that any plug that remains in the tooth is a protection from tooth-decay. Many teeth that come under my observation might better be left to decay without the aid of the soft, spongy fillings that are in them, for they only serve to hasten disintegration, and frequently before the filling drops out, the tooth is past redemption.

Thus the popular mind is “*rankly abused*” by these charlatans, and thousands on thousands of the pearly treasures are destroyed which should add beauty to the human face.

Experience has taught many to their sorrow, that a fair compensation paid to a competent operator is to be preferred to low prices, little pain, and the pretense of warranted work, at the hands of quacks and pretenders.

This class of men make the operative branch of their business play into the hands of the mechanical, for: “Teeth intrusted to their care will usually last from two to five years; the patient is then obliged to have them extracted and an artificial set inserted.”

One victim of the quack tells a friend that *Dr. A.* or *B.* is a fine dentist. He filled their teeth, and they have been painless since they were filled, just as though their preservation depended on the absence of pain rather than on the security of the cavity from moisture and acidity. Such attempts at preservation only hastens destruction. The English language is too barren of scathing terms to speak of these human vampires. “Put a whip in every honest hand to lash the scoundrels naked through the world.”

“CREESUT AND ASS-NIC.”

DR. W. W. H. THACKSTON.

The following incident will illustrate the character and qualifications of quite a large percentage of the “itinerating” dentists of a former day:—

When quite a young man, just out of the Baltimore Dental College, I had fortunately secured rather an eligible office, immediately over the single drug store of the small interior town in which I had determined to locate. Anxiously awaiting employment, and seriously pondering the prospects of success and the chances of failure, I was one morning sadly taken back and disappointed by a visitor, in whom I hoped to find a patient, but who, to my dismay, introduced himself as Dr. J., a dentist—a brother practitioner—and, as he somewhat patronizingly observed, “a dentist of ten years’ experience.”

Having plenty of time and leisure, and some curiosity as to the character and value of that "ten years' experience;" I courteously and cordially acknowledged the honor of the visit, and gave attention to all that fell from the veteran Doctor's lips. A few minutes sufficed to take the full measure of that "experienced" "brother dentist." I found him to be of the "natural bone-setter" class—a rough, illiterate man, with some shrewdness, some manual and mechanical aptitude, and possibly some inventive talent.

After a somewhat tedious rehearsal of his modes and methods, his wonderful skill, his infallible success, and his great renown wherever he had traveled and practiced, my visitor remarked that "he had been told there was an *easy* way to kill the *quicks* in teeth; could I tell him whether it was so or not?—and if so, was it any better than burnin' and borin'?" The Doctor was given "Spooner's" treatment for devitalizing the dental pulp, which was then comparatively new, and much more highly appreciated than it now is. Indeed, Spooner's discovery was at that time regarded as a wonderful advance.

"Creesut and ass-nic!" exclaimed the astounded Doctor. "Why, that's pizen! hit kills people! I kills rats with ass-nic." I reminded my "experienced" co-laborer of the homeopathic dose for an exposed pulp, and the necessity of sealing even that small quantity securely in the cavity to which it might be applied; and assured him of the perfect safety of the treatment when properly managed.

"Where can I git some of the stuff that is strong and good?"

The Doctor was told that just under the floor on which he was then sitting, he would find a skilful druggist, who would supply him with whatever he might need in that line.

My visitor, in his peculiar way, expressed his appreciation of the courtesy I had shown him, saying "he was much oblieged," and thought "swapping ideers might help us both. *Experience* was a great thing; and as for himself, he was always ready to do what he could for *young folks* who were workin' in teeth."

The Doctor took leave, and proceeded to interview the druggist. The scene that transpired in that interview I did not witness, but it was reported to me by the apothecary and several gentlemen present. I did hear quite a stir and commotion in the store-room beneath my office, and when informed of what had occurred, regretted that I had not been present, to save my friend from the disaster that befell him. Approaching the apothecary, Dr. I. inquired if he kept "creersut and ass-nic." "A full supply," replied the druggist. "Is it good and strong?" queried the Doctor. "I wants it for a *very* particular purpose." The dentist was handed a bottle of creosote for inspection and examination, which he immediately proceeded to uncork and

apply to his lips and tongue. "Ouch ! Oh ! Oh, Lord ! Oh, L-o-r-dy !" —the bottle fell from his hands, the druggist screamed, and caught up his olive oil and mucilage. The dentist sputtered and spat ; the druggist filled the sufferer's mouth with oil and acacia, and mopped and bathed his lips ; the dentist capered and danced around, and puffed and blew as best he could, with tears in his eyes, and bload in his cheeks ; and after a time of anguish, with the attention and kindness of the druggist, with some loss of mucous membrane, and quite a puckered and distorted mouth, our friend became comparatively comfortable and quiet. He remarked to the druggist that "his medicine was *powerful strong*;" "but I'll take a quarter's worth of both sorts—and I'll not sample your ass-nic."—*Southern Dental Journal*.

In Looking for the Cause of Pain; we are often led far from the pain itself. A pain in the eye or ear may come from a decayed tooth. Neuralgia may be treated without benefit by applications to the seat of trouble, while the most simple treatment on some diseased tooth will dissipate the neuralgia like magic. Headache may be caused by the condition of the stomach, and obstinate vomiting may point to irritation of a remote organ. Pain between the shoulders may point to inflammation of the liver, and pain in "the small of the back" to inflammation of the kidneys. An eruption on the skin may not show disease of the cuticle, but direct attention to an internal organ, and the character of the eruption shows which organ needs help.

FIDEI DEFENSOR.

Oh! think not we have no feelling,
And that our hearts are frozen.
Judge not our cruel dealings
By the horrid work we've chosen.

No! we are not void of feeling!
Tenderest sympathy with you we share.
We cannot stem the chills a stealing
Up your back-bone to your hair.

Some one must relieve the aching,
Some one all your pearls restore :
Remember this while you are shaking,
When in the nerve-canal, we bore.

Temporary are your chills and shaking;
Permanent is the work we do :
Never more that fierce aching.
Now the dentist bid adieu.

C. A. R.

Editorial.

PIRACY IN TRADE MARKS.

The United States Congress has very considerably passed laws affording and guaranteeing protection to manufacturers and tradesmen in their established or recognized advertising methods. A very interesting case in point is the decision rendered by the court of appeals in St. Louis recently, in the suit of Sanders vs. Jacobs. The facts are as follows, viz: In the year 1871, Dr. Sanders opened an office in St. Louis for the practice of dentistry, his place being advertised and known as the "New York Dental Rooms." He had a sign made and displayed, bearing this name, to attract the public.

In 1880, Dr. Jacobs, the defendant, opened a dental establishment two doors from that of plaintiff, using a *sign* similar in style to that used by plaintiff, but bearing the inscription "Newark Dental Rooms."

Suit was entered by Dr. Sanders against Dr. Jacobs to enjoin him, the defendant, from using such sign, alleging that it was devised similar in construction to that of plaintiff's with intention to deceive his customers and deprive him of business. The court granted the injunction, holding it as apparent that the defendant used this sign to deceive the public and to attract the customers of the plaintiff, Dr. Sanders.

We here call attention to a similar case on the part of a manufacturer of *artificial teeth* in Philadelphia, and note the following facts: Some years ago the Wilmington Dental Manufacturing Company, of Wilmington, Delaware, conceived a new and novel method of advertising their *artificial teeth*, consisting of a series of sample blocks, systematically arranged on a card representing various shades and molds of their teeth, and intended for the convenience of dentists in ordering. On this device *The Wilmington Dental Manufacturing Company* secured letters patent, under date December 25, 1883, and the cards were distributed among the dental profession throughout the country.

This Philadelphia manufacturer, recognizing the utility and benefit of the device to the Wilmington Dental Manufacturing Company, concluded he would adopt a similar scheme, and in defiance of the rights of said company had made and is now engaged in the distribution of such cards.

We are not sure that any legal steps are in progress, none have as yet been made public, but that there is an infringement of the rights of the Wilmington Dental Manufacturing Company, as clear and specific as was decided to be the case in the suit of Dr. Sanders, of St. Louis, there can be no question.

INFLAMMATION OF THE PERIOSTEUM.

Periostitus, as a cause of pain and sensitiveness of a tooth, is often overlooked. Many a tooth has been lost "because it was ulcerating," that has had no ulcer; and many a dentist who has drilled into "a dead tooth to give relief to putridity of a pulp or an abscess," has been astonished to find a live nerve. But even then, some have been so sure the tooth was ulcerated, they have forthwith sent a description of the case to a dental journal to prove a live tooth may be abscessed. There are few dentists who sufficiently study symptomatology, and therefore they are not able to diagnose clearly. For instance, they do not discriminate between an abscess and an ulcer, between inflammation and supuration, between affections of the tooth and of the surrounding tissues.

Perhaps we have been pounding on a tooth for two or three hours with a heavy mallet. The next day the patient returns with the tooth so tender he cannot bear it touched. Immediately we declare for an inflammation of the tooth. Perhaps we have only filled with alloy, and yet the patient comes back in a week, declaring "the tooth is an inch longer than any of the others." We sigh as we assure him an abscess is forming underneath the root which is throwing the tooth up. A patient comes in at an almost unreasonably early hour, complaining bitterly of a toothache in a perfectly sound tooth, and because we can find no cavity that has ever been filled or can be filled, we believe he has mistaken the tooth and we look about elsewhere in every direction for the cause. We pick and wedge and strike, but there is no response till we tap on this tooth, which our patient declares has grown long since he went to bed; that, in fact, it was not till toward morning he felt any inconvenience. True enough, it is a little loose, it has lengthened, and it gives other indications of *something* wrong. What is it?

The answer in either of these cases will probably be the answer in all: Inflammation of the periosteum. The pounding of the tooth in the process of gold filling bruised this delicate, vascular, columnar membrane, on which the tooth sits as on a cushion, and inflammation and extravasation of the blood vessels now cause a thickening or swelling of the tissue, that pushes the tooth up, while to press down on the tooth is "like pressing down on a boil." Build a little gutta-percha on a neighboring tooth, so that this one may have absolute rest for a few days. A cure will generally follow without other treatment.

Look at the alloy filling you put in a few days since. Do you see that little bright spot on its surface? Grind it away. You have ground away the trouble also. In such cases, some ignorant observers tell us "the amalgam has swelled?" Nonsense. The trouble was

from building the filling too full. Be sure to take so much of it away that it cannot be felt by the antagonizing tooth, and your patient will bless you.

We do not say that, in some of these cases, there may not be an abscess; or where there is no abscess, that a dying pulp may not produce one; or where there is no pulp, that irritation may not have brought into activity a slumbering abscess. But we do say each of these will have symptoms peculiarly their own, and simple irritation or inflammation should not be mistaken for one.

How about that sound tooth that is loose? You will probably find a little worn spot that a cusp of the opposing tooth has ground on; or a prominent cusp of an antagonizing tooth has swayed it to and fro, as the teeth have been grinding during sleep, from the effect of mental or physical disturbance. Put your corundum point in your engine and, keeping it wet, grind—no; not the sore one, but its antagonist. Look carefully for the protuberance that has done the mischief, and grind it away so thoroughly that the sore tooth cannot by any motion of the jaw touch the spot, and you have cured your tooth. Irritation of the periosteum will cease, and contusion of the blood vessels by rest, will be healed, and the thickening of the membrane will either disappear or assume a normal condition.

Irregularities can be easily remedied in early life. It is their neglect till the alveolus becomes firm, and the teeth habituated to a fixed position, that makes the process difficult.

We saw a young Miss in a dental office recently who was most completely transformed in her features by having her teeth regulated. They had previously so protruded, and the arch was so narrow, that she was really ugly. Now her features had become so symmetrical by the broadening of the alveolar arch and the carrying back and regulating of the teeth that she was a pretty girl. How such a change will increase her "prospects in life." In any child it is like giving to them a fortune.

Admittance to the Dental Section of the forthcoming International Medical Congress is more liberal than it was in the last Medical Congress. It is left to the discretion of the officers of the section whether the applicant is an M. D. or not.

The Maryland Dental Law contains one selfish provision. It does not recognize diplomas from dental colleges outside its own borders, so that dentists must graduate in the state, and be subject of approval by the state dental board, just as if they were not graduates. It is rather singular that in the law as published by most, if not all, the dental journals of the country, this provision does not appear.

HOW TO LEARN PURE ENGLISH.

1. Take pains with your speech in common conversation. Most of us would be ashamed to write as we speak, or to speak on set occasions with our faults in usual intercourse. This slovenlyness in language should be avoided, and may be with a little *constant* attention.
2. Allow freedom of criticism ; and, in proper spirit with much carefulness, correct others ; which will tend to correct your own diction.
- You will be astonished to see how much there is to correct, even with your present knowledge, and how fast you will improve, if you really persevere.
3. You will be benefitted much more by making philology a formal study. You will never regret thus laying a proper foundation for correct speech. We estimate the intellectual worth and standing of our associates largely by their language. A precise, tasty, and refined choice of words is everywhere considered a merit and goes far to introduce us into the best society. A tease, vivacious, pleasing conversationalist is the light and attraction of any company ; and the difference between a winning conversationalist and an interesting writer is not great,—master the first and you will be pretty sure to make an easy conquest of the other. But you must study books specially devoted to the subject. Consult your dictionary frequently.
4. But this attainment is more difficult if left to mature age, and at best cannot be left wholly to book learning ; therefore, commence to improve your language immediately by studying the best authors, listening to the best speakers, and specially prize the company of correct, refined, and pleasing conversationalists. Everywhere and at all times study to have your thoughts well arranged, and their expression tease. Do not be contented even with proper words : cultivate clearness of articulation, preciseness of pronunciation, and gracefulness of diction. Of course you should avoid a labored style, but if this is at first noticeable it will soon wear off as the effort of correctness becomes a habit ; every movement of the lips, the tone of the voice, and the expression of the countenance, as well as the proper choice of words will become natural, easy, and graceful—a mental culture and a moral refinement of more worth than the possession of gold.
5. Never tire of your effort to make all you write as clear, correct, and interesting as is possible. Few are such blunder-heads as we are. It is often necessary for us to rewrite two or three or more times before we are satisfied we have done our best ; and then we are often mortified in finding in our finished effort palpable blunders. But if you do the best you can every time, you will improve.
6. A fine opportunity to begin, is right at home and at the table. See that your children speak grammatically, clearly and pleasantly.

This may be done with so much rigor and offensiveness as to be ridiculous and worse than useless. But it also may be done so that the children will be brought up to speak correctly without knowing when they were taught. If all, including yourself, are taught to lop off superfluous words, to avoid incorrect ones, and to employ the best, you will find that right at home while you are teaching others you will learn what the mere school-room could not teach either them or you. Have a good dictionary always easy of access,—Webster's Academic is good,—and study it thoroughly, consult it for every doubtful word.

Chemical Affinity.—Says a writer, “In the lowest kingdom we see each atom of mattter with its corresponding uses brought into play by *chemical affinity*.”

Before publishing we suggested the elimination of the word chemical, but this was objected to. We only refer to this expression as an example of the prominence chemical affinity is given as the cause of the productions, conditions, and workings of nature. We do not ignore chemical affinity, but wish to show there are other forces at work doing their important part.

Perhaps first among all is electricity. So universal is its presence, so varied are its actions, and so powerful are its effects, that, in the opinion of some scientists, it is *the affinity*, and that forces under all other names are but its manifestations. We cannot explain it, nor its mode of operation, and are often puzzled even to explain its manifestations; it is simply a something we call electricity,—so subtle we hardly know that it is a *something*, we only know its results. We speak of it as an affinity, but we see quite as much of its repulsion. It seems ever tearing down as well as building up, dissolving as well as combining, destroying, as well as creating. It is as widespread as the heavens, doing wonders on the grandest scale, yes, and apparently flashing beyond the heavens and from beyond the heavens to us—more, controlling the very stars and commanding all motion; and yet, in its delicate affinities, it is intimate, specific, and beautiful in the formation, combination, and inseparable bond of the tiniest molecule.

The greatest changes produced by the movement of water, often in great rivers beneath us as well as on the surface, are not from chemical affinities; and are the capillary attractions and repulsions which so silently and delicately, and yet so efficiently work their wonders, chemical affinities? We used to speak of light and heat as chemical affinities, but now we speak of them as modes of motion. We might go on with quite a list of forces manifested in “the lowest kingdom” which it would be extremely difficult to couch under the term “chemical affinity.”

THE DENTIST'S POSITION AT THE CHAIR.

Dr. J. Hardman of Muscatine says, not one-half of those who have stood at the chair ten consecutive years are free from some variety of pelvic disorder, as well as other ailments. We trust this is not true, that it is quite an exaggeration; and yet we know from a twenty-eight years' experience that the dentist's position at the chair has much to do with his health. If he stands it must be in an erect position: not bent forward so as to cramp his chest and bring on consumption or give him spinal disease, nor bent on one side standing on one foot till he has "hip-ail" pain in his side, and perhaps chronic internal disease from the strain. We have known dentists hold their head over so low as to cause serious trouble with the brain. Dental chairs are so admirably constructed now that none of these positions are necessary. But one of the greatest reliefs to awkward and tiring and unhealthful positions is in the devices now contrived for sitting at the chair. In fact, without any device other than a stool capable of being easily raised or lowered and bent backward or forward and to the side is a great relief. Some prefer it with a center or fifth leg made longer than the rest so as to favor these motions, and yet to leave the stool at rest without the danger of its falling over. Young dentists are learning "these lazy habits" faster than those who have been so long in the old ways of standing till they think it undignified to sit, and perhaps a little awkward. But whether the dentist stands or sits, he should so arrange his patient, his chair, and himself as to afford an easy and healthful position.

Should We Charge for Cleaning Teeth? It is the habit with so many dentists to make no charge for cleaning teeth that it has become a surprise to most patients to find an item in their bill for such work. This may not be so in all communities, but it certainly is in many. We think if any dental work should be "thrown in" it should be the filling, for this is the most agreeable; but for cleaning the teeth there should be full compensation, for it is generally the most filthy, tedious, and disagreeable. Besides, when there is no expectation of reward, it is generally done poorly, though it should be as thoroughly done as any part of the work.

Let us as quickly and as completely as possible impress this truth on the minds of our patients,—not only that it is as important as fillings but that it should precede it. When visiting dental offices, and invited to look at a beautiful filling just put in a tooth, how often we have been disgusted at the nasty, stinking condition of the mouth in which the work was done. Besides, how imperfectly we can judge of the condition of the teeth or the extent of their decay while they are partially covered with tartar and besmeared with slimy decomposition?

No wonder dentists who take an estimate of the work before them amid such covering of tartar and filth find afterward they have underestimated the expense. It will often be found far better to spend the whole of the first sitting in removing tartar, cleaning and polishing the teeth, and giving the patient an intelligent view of the condition of things, with advice for the future which shall prevent its recurrence. Then, on his return, he will be prepared to estimate with the dentist the worth and the expense of the work to be done, and appreciate it better when it is perfected, without anything "thrown in."

Bulbs on Roots of Teeth are growths of cement. These may take place during the growth of the roots: but probably more frequently they occur after mature age. Some say these extra growths of cement are caused by severe usage of the teeth, or by some irritant on the surface of the roots. But if by severe usage, how is it the growths are in tubercles, or in the bending or prolongation of the apices? And if by the latter what can be the nature of the irritant. Is it tartar? If so, how comes it that these growths are the more frequently on or near the ends of the teeth where we seldom find tartar, and not on the surface near the gum where it is very commonly found? Are they not more likely to be caused by absorption of portions of the alveolus; that produces pits and depression in the bone which make small vacuums that are filled with extra cement? A blow on the grinding surface of a tooth, or its severe occlusion, may produce absorption of the alveolus at the end and around the apex, thus producing a space to be filled with cement on the end or the surface of the root.

The dental section. The resolutions of the January meeting of the Chicago Society published on another page express *what was* the sentiment of a majority of the Dental profession. But the Medical profession of this country have so radically and generously changed their position with reference to the representation of dentists and the Dental profession in their forthcoming Congress, that *now* we think their invitation should be cordially accepted, and every effort made to assure the Dental section a success. We are glad this is being done, and that most who have been opposed to it are now cordially working to make the section worthy of the Dental profession of the World.

Dr. J. J. R. Patrick.—Who would have thought one for so many years a teacher in the profession was still so young and gallant and prim? But so he appeared as he presented himself to us the other day just from his learned audience of representative dentists in New York.

Miscellaneous.

A SIMPLE METHOD OF FIXING CRAYON DRAWINGS ON PAPER.

F. P. DUNNINGTON,

Professor of Analytical Chemistry, University of Va.

At the Ann Arbor meeting of the American Association for the Advancement of Science, the following communication was presented:

It is often desirable to preserve for future use such drawings as are usually made on the blackboard. All such drawings may be executed with ease and rapidity on unsized paper, employing the colored crayons which are made for blackboard use. The colors red and blue are most conspicuous; other colors answer fairly. As to paper, moderately heavy, unsized manilla answers well; even white wrapping paper may be employed, but it would be too easily torn. In the course of making the drawing, a line may be fairly erased by brushing it lightly. A very dilute varnish is made by adding to one part of Damar varnish twenty-five parts of spirits of turpentine; this is best preserved in a corked bottle.

To fix the drawing, a quart or more of the varnish is poured into a trough (made of a piece of tin guttering) a little longer than the width of the paper, and the paper is drawn through the varnish, which may or may not flow over the upper side of the paper; the latter is then hung up to dry over night, and the drawing may be handled with no danger of blurring. The color of the paper is scarcely altered by the varnish.

As to the amount of material: Twenty pounds of paper require about three gallons of turpentine and one pint of Damar varnish.

Prof. Simon H. Gage, of Cornell University, has made considerable use of the above process, and kindly furnishes the following notes, which will enhance its value:

1st. Brown, green, and the various shades of orange crayon are very useful, and for black the moderately hard crayons known as Conte a Paris are all that could be desired.

2nd. Water colors and fresco colors may also be used to good advantage where a good variety is needed.

3rd. For erasing, the filtering paper used by chemists has been found most efficient.

4th. As white crayon marks are rendered almost invisible by the varnish, the drawings may be outlined with white. This is sometimes of considerable importance in making a complicated drawing.

5th. In fixing, if one does not have a trough as mentioned above, the diagram may be hung up, and the varnish rubbed on the back with a mass of cotton or with a wide brush.

6th. If it is desirable to add letters, figures, etc., to a diagram after it is fixed, such additions may be made in crayon, and then fixed by pressing a mass of cotton, wet with the varnish, directly down upon the the part; no blotting will occur unless the cotton be moved from side to side.—*University of Virginia, Nov. 1885.*

TO KEEP FLOWERS.

For the last three years, says Mr. P. Hennings, certain fruits, flowers, and other portions of plants have been preserved in perfect condition at the Berlin University [Botanical Museum], by means of a solution containing four parts of water and one part of alcohol saturated with salicylic acid.

Cocaine in Hay Fever.—Dr. S. W. STRICKLER, of Orange, N. J. writes to the *Med. Record* that he has suffered from hay fever for six years, and never succeeded in materially mitigating the severity of the attacks till he used cocaine.

“The symptoms were violent, and repeated sneezing, profuse discharge of a thin watery fluid from the nostrils, itchiness of pharynx, nose, and eyes, headache, impaired appetite, and restlessness at night. While suffering from all these symptoms I sent for a bottle of soluble hypodermic tablets of cocaine, 1.25 grain each, and introduced three into each nostril, keeping them in position, and favoring rapid solution by forcing the alæ against the septum nasi with a handkerchief. As soon as the tablets were dissolved, I snuffed the solution up the nostril in order to secure a thorough application of the drug to the nasal mucous membrane. After using the first six tablets I experienced great relief, and after using fifteen or twenty I was as free from hay fever as I think it possible for any one to be. I used two bottles full, and then discovered that the disease needed no further treatment, as there was no disposition to sneeze, the nerves of the nasal mucous membrane having become non-susceptible to the various irritants which before had caused it so much trouble.—*Med. Science.*

A physician of Rio Janeiro, who this year inoculated nearly 5,000 persons for the prevention of yellow fever, says that not one died, while 400 who had not been inoculated died.

The grinding of the crown glass disk of the immense lens for Lick Observatory, California, is well under way at Cambridge, Mass., yet a whole year's work remains to be done before it can be finished.

Machinist asks for a receipt to renew an old rubber coat or gossamer. Brush over with a solution of $\frac{1}{2}$ ounce of pure rubber dissolved in 1 pint of carbon bisulphide. By proper treatment and a series of coats a deposition of rubber on the fabric will be obtained.

The Excise Commissioner state that there are 8,054 licensed saloons in New York. Estimating the population at 1,400,000, this is one saloon for every 174 inhabitants.

Cures of sciatica are reported as having taken place in Paris after a single application of Dr. Debove's method of freezing the skin above the painful parts with a spray of chloride of methyl. The operation is said to be applicable also to facial neuralgia.